

CLAIM AMENDMENTS

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Claims 1 to 3 (canceled)

4. (currently amended) The process according to Claim-~~2~~ 23, ~~further comprising:~~
~~using wherein~~ the control circuit to condition an audio signal as a function of is responsive to a back
electromotive force of a driver of the sound transducer.

5. (currently amended) The process according to Claim-~~2~~ 23, ~~further comprising:~~
~~using wherein~~ the control circuit to condition an audio signal as a function of is responsive to an
impedance of a driver of the sound transducer.

6. (currently amended) The process according to Claim-~~2~~ 23, wherein the sound transducer
comprises a coil and a diaphragm, ~~the process further comprising:~~
~~using and~~ the control circuit to condition an audio signal as a function of is responsive to a back
electromotive force of the coil.

7. (currently amended) The process according to Claim-~~4~~ 23, wherein the sound transducer
comprises a coil, ~~the process further comprising:~~
~~using and~~ the control circuit to condition an audio signal as a function of is responsive to an
impedance of the coil.

8. (currently amended) The process according to Claim-~~4~~ 23, ~~further comprising:~~
~~using wherein~~ the control circuit to condition an audio signal as a function of is responsive to a
motor factor of a driver of the sound transducer.

9. (currently amended) The process according to Claim-~~4~~ 23, ~~further comprising:~~
~~using wherein~~ sound transducer comprises a support and the control circuit to condition an audio
signal as a function of is responsive to spring stiffness of a spring the support of the sound
transducer.

10. (currently amended) The process according to Claim-1 23, wherein the sound transducer comprises a coil and a diaphragm, ~~the process further comprising:~~
~~using and~~ the control circuit to ~~condition an audio signal as a function of~~ is responsive to a motor factor of the coil and diaphragm.

11. (currently amended) The process according to Claim-1 23, wherein the sound transducer comprises a diaphragm, ~~the process further comprising:~~
~~using and~~ the control circuit to ~~condition an audio signal as a function of a~~ is responsive to spring stiffness of a ~~spring~~ support of the coil and the diaphragm.

12. (currently amended) The process according to Claim-2 23, wherein the sound transducer comprises a ~~speaker-transducer having a~~ coil and diaphragm assembly.

Claims 13 to 22 (canceled)

23. (currently amended) A process for ~~controlling generating a signal to drive a sound transducer in an~~ audio reproduction system of a telephony device which includes a sound transducer, the process comprising:

~~preparing a model of the sound transducer portion of the audio reproduction system;~~

~~providing a control circuit having first and second inputs;~~

~~configuring the control circuit as a function of the model;~~

~~providing receiving an audio signal to the~~ at a first input of a control circuit, wherein the control circuit is configured according to a model of the sound transducer;

~~providing to the second input receiving a signal which is indicative of a state of the sound transducer~~ at a second input of the control circuit, wherein the state is a relative position of a movable portion of the sound transducer with respect to another portion of the sound transducer; and

~~utilizing the control circuit to generate an output signal which is a function of to drive the sound transducer, wherein the output signal is responsive to the signal indicative of a state of the sound transducer and the audio signal.~~

Claim 24 (canceled)

25. (currently amended) The process according to ~~Claim 24, wherein providing to the second input a position indication signal~~ Claim 23 that comprises generating the position indication signal signal indicative of state using an electrical characteristic of the system.

26. (currently amended) The process according to Claim 25, wherein the sound transducer ~~includes~~ comprises a coil and the electrical characteristic is an impedance of the coil.

27. (currently amended) The process according to Claim 25, wherein the sound transducer ~~includes~~ comprises a coil and the electrical characteristic is a capacitance of the coil with respect to a structure of the sound transducer.

28. (currently amended) The process according to ~~Claim 24~~ 23, wherein ~~providing to the second input a position indication signal~~ comprises generating the position indication signal the signal indicative of state is generated optically.

29. (currently amended) The process according to Claim 28, wherein ~~generating the position indication signal optically~~ comprises using an infrared light source and directing the signal indicative of state is generated using light directed from the an infrared light source to a the movable portion of the sound transducer.

30. (currently amended) The process according to Claim 29, wherein ~~using an~~ the infrared light source ~~comprises providing an activation signal to~~ is an infrared light emitting diode.

Claim 31 (canceled)

32. (currently amended) The process according to ~~Claim 31~~ 23, wherein ~~providing to the second input a position indication signal~~ comprises providing to the second input a diaphragm position indication signal the movable portion of the sound transducer is a diaphragm.

33. (currently amended) The process according to Claim 32, ~~wherein providing a diaphragm position indication signal that~~ comprises generating the ~~diaphragm position indication signal~~ signal indicative of state using an electrical characteristic of the system.

34. (currently amended) The process according to Claim 33, wherein the sound transducer comprises a coil and the electrical characteristic is an impedance of ~~a~~ the coil.

35. (currently amended) The process according to Claim 33, wherein the sound transducer comprises a coil and the electrical characteristic is a capacitance of ~~a~~ the coil with respect to a structure of the ~~speaker sound~~ transducer.

36. (currently amended) The process according to Claim ~~31~~ 32, wherein ~~providing to the second input a position indication signal of the sound transducer~~ the process comprises generating the ~~position indication signal~~ signal indicative of state optically as ~~a function of a~~ in response to the relative position of the diaphragm.

37. (currently amended) The process according to Claim 36, wherein generating the ~~position indication signal optically~~ comprises using an infrared light source and directing the signal indicative of state is generated using light directed from said ~~an~~ infrared light source toward a portion of the diaphragm.

38. (currently amended) The process according to Claim 37, wherein ~~using an~~ the infrared light source ~~comprises providing an activation signal to~~ is an infrared light emitting diode.

39. (currently amended) The process according to Claim 23, wherein the sound transducer comprises ~~a speaker transducer having a coil and a diaphragm, and wherein preparing a model of the sound transducer portion of the audio reproduction system comprises determining the coil is the~~ movable portion of the sound transducer and the model comprises an operational parameter of the speaker sound transducer as a function of ~~a~~ the relative position of the coil with respect to ~~a~~ another portion of the ~~speaker sound~~ transducer.

40. (original) The process according to Claim 39, wherein the operational parameter is an impedance of the coil.

41. (currently amended) The process of Claim 39, wherein the operational parameter is a motor factor of a driver of the ~~speaker~~ sound transducer.

42. (currently amended) The process of Claim 39, wherein the ~~speaker~~ sound transducer includes a ~~spring~~ comprises a support coupled to the diaphragm, and wherein the operational parameter is a spring stiffness of the spring support.

Claims 43 to 46 (canceled)

47. (currently amended) The process according to Claim ~~45~~ 23, wherein ~~utilizing the control circuit to generate an output signal comprises compensation of the system with respect to a motor factor of the voice coil transducer~~ the audio reproduction system comprises a signal conditioning portion and a sound conditioning portion, and wherein the model comprises a representation of the sound conditioning portion of the audio reproduction system.

48. (currently amended) The process according to Claim 23, wherein the audio reproduction system comprises a signal conditioning portion and a sound conditioning portion, and wherein the further comprising preparing a model comprises a representation of a the signal conditioning portion of the audio reproduction system.

49. (currently amended) The process according to Claim 23, wherein utilizing the control circuit to generate an output signal comprises ~~compensation of the system with respect to~~ compensating for a back electromotive force of a driver of the sound transducer.

50. (currently amended) The process according to Claim 23, wherein utilizing the control circuit to generate an output signal comprises ~~compensation of the system with respect to~~ compensating for an impedance of a driver of the sound transducer.